WHAT IS CLAIMED IS:

1. An assembly, comprising:
    a) a rotor aligned with a longitudinal axis of the assembly;
    b) an impeller aligned with the rotor;
    c) an interconnecting arrangement configured to permit continuous rotation of the rotor and the impeller in a first direction, the arrangement including:
        i) a first interconnecting structure configured to rotate in concert with the rotor; and
        ii) a second interconnecting structure configured to rotate in concert with the impeller;
    d) a locking arrangement configured to prevent continuous rotation of the rotor in a second direction opposite the first direction.

2. The assembly of claim 1, wherein the second interconnecting structure includes a second interconnecting cam structure having an incline surface and an engagement surface.

3. The assembly of claim 2, wherein the first interconnecting structure includes an extension rib that translates along the incline surface of the second interconnecting cam structure when the rotor rotates in the second direction.

4. The assembly of claim 3, wherein the extension rib of the first interconnecting structure contacts the engagement surface of the second interconnecting cam structure when the rotor rotates in the first direction.

5. The assembly of claim 1, wherein the interconnecting arrangement axially positions the rotor in a first axial position, along the longitudinal axis, when the rotor rotates in the first direction, and wherein the interconnecting arrangement axially

positions the rotor in a second axial position, along the longitudinal axis, when the rotor rotates in the second direction.

6. The assembly of claim 5, wherein the rotor is spaced apart from the impeller when the rotor is positioned in the second position.

7. The assembly of claim 1, wherein the locking arrangement includes:
   a) a first locking structure configured to rotate in concert with the rotor; and
   b) a second locking structure rotationally fixed relative to the first locking structure.

8. An impeller and rotor assembly, comprising:
   a) a shaft having a first end and a second end;
   b) a rotor mounted on the shaft adjacent to the first end of the shaft, the rotor including:
      i) a first end and a second end;
      ii) a first interconnecting structure positioned at the first end of the rotor;
      iii) a first locking structure positioned at the second end of the rotor;
   c) an impeller mounted on the shaft adjacent to the second end of the shaft, the impeller having a second interconnecting structure;
   d) a first end cap mounted on the first end of the shaft;
   e) a second end cap mounted on the second end of the shaft, the second end cap including a second locking structure corresponding to the first locking structure of the rotor to prevent rotation of the rotor in a predetermined direction.

9. The impeller and rotor assembly of claim 8, wherein the first interconnecting structure includes an engagement rib extending from the first end of the rotor.

10. The impeller and rotor assembly of claim 9, wherein the second interconnecting structure includes a cam structure having an incline surface and an engagement surface.

11. The impeller and rotor assembly of claim 10, wherein the engagement rib of the first interconnecting structure slidably contacts the inclined surface of the second interconnecting structure when the rotor rotates in the predetermined direction.

12. The impeller and rotor assembly of claim 11, wherein the engagement rib of the first interconnecting structure contacts the engagement surface of the second interconnecting structure when the rotor rotates in a direction opposite the predetermined direction.

13. The impeller and rotor assembly of claim 8, wherein the first locking structure of the rotor includes a locking member having teeth, and the second locking structure of the second end cap includes corresponding teeth, the teeth of the rotor being configured to engage the corresponding teeth of the second end cap to prevent rotation in the predetermined direction.

14. The impeller and rotor assembly of claim 13, wherein the corresponding teeth of the second end cap are formed within a recess of the end cap such that the teeth of the rotor engage the teeth of the second end cap only when the rotor is axially positioned apart from the impeller.

15. A method of limiting rotation of a motor in a predetermined direction, the method comprising:

a) providing a rotor coupled to a motor and including a locking structure, and an impeller interconnected to the rotor;

b) axially displacing the rotor from a first position adjacent to the impeller to a second position located a distance from the impeller when the motor rotates in the predetermined direction;

c) engaging the locking structure of the rotor with a fixed arrangement to prevent continuous rotation of the motor in the predetermined direction.

16. The method of claim 15, wherein:

a) the rotor slidably contacts a helical structure of the impeller to axially displace the rotor from the first position to the second position when the rotor rotates in the predetermined direction.

17. The method of claim 16, further including:

a) disengaging the locking structure and returning the rotor to the first position when the motor begins to rotate in a direction opposite the predetermined direction; and

b) continuously rotating the motor in the direction opposite the predetermined direction.

18. An impeller for use with a permanent magnetic motor, the impeller comprising:

a) a main body;

b) a plurality of blades extending from the main body;

c) a cam structure connected to the main body, the cam structure including an incline surface and an engagement surface, the cam structure being configured to provide contact between the engagement surface of the cam structure and a component of the permanent magnetic motor when the motor rotates the component in a first direction, and provide contact between the incline surface of the cam structure and the component of the permanent magnetic motor when the component of the motor rotates in a second opposite direction.

19. The impeller of claim 18, wherein the main body includes a central bore, and the cam structure is formed on the inside diameter of the central bore.

20. The impeller of claim 18, wherein the blades of the impeller are straight blades.